

Abstract

An apparatus and a method for producing a multi-pulse sequence for irradiating a substance provided with quadrupole nuclei with either integer or half-integer spins to detect an NQR signal emitted therefrom. The apparatus has pulse sequence

5 generating means adapted to produce a combination of two or more pulse sequences, arranged so that a definite regularity of the phase alteration of pulses in each of the pulse sequences occurs that is equivalent to a shift of spectral components of the pulse sequences in relation to each other. Furthermore, in at least one of the pulse sequences, there are not less than two phases alternating.

10 A preparatory pulse may be included in one of the pulse sequences to reduce the effect of temperature, increase the intensity of the NQR signal and simultaneously eliminate intensity anomalies. Alternatively, the combination of pulse sequences may be different from a combination of PAPS and NPAPS, and none of the pulse sequences contain a preparatory pulse.